

ADDITIONAL DATA ON TRANSDUCTIONS OF "FLA" AND "H" FACTORS FROM SINGLE
PHASE CULTURES OF SAL. ABONY (SW803 Fla⁺ b:enx) TO SAL. TYPHIMURIUM
SW1157 Fla⁻ i:1,2).

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In the foregoing report on transduction SW803 (Fla⁺ b:enx) ---x
SW1157 (Fla⁻ i:1,2), numbers of linked transduction type were small, and
it has been desired to accumulate more data to get statistical completeness.
In the present papers, additional result obtained by the repeated experiment
were reported, and were summarized with the previous result.

Materials and methods are the same as the previous experiment.

Table 1 shows the additional result obtained, and Table 2 shows the
summary of the previous and the present results. Both results coincide well
each other. The frequency of linked transduction of H₁ to Fla₁₁₅₇ is fairly
homogeneous.

SUPPLEMENT. Stability of SW1157 and H-phase of reverted cultures.

Number of swarms per brush recovered in above transduction experiment
is shown in Table 3. In series ~~in which~~ ^{in which} ~~by~~ ^{by} ~~ate~~ ^{ate} and recipient culture were
mixed, 4 to 7 swarms grew per brush in average. In the control series,
swarm did not appear in 20 hours (when the isolation of transduction swarms
was made), but when they were incubated farther (at 37°C) the growth of
swarms are observed in 48 hours, as numbered in parenthesis in Table 3.
Slide agglutination test of penassay broth cultures of these swarms has
shown that they are in a same phase as supposed from preliminary transduction
test. In parallel with these experiment, the same cultures used in transduction
experiment were inoculated to MGA-stabs. 15 subcultures were prepared on
each phase (0.05 ml per stab), and growth of swarm was watched incubating

at 37C. Only 2 stabs in supposed Fla⁻-i cultures and 1 stab in supposed Fla⁻-1,2 cultures grew swarms. Their antigen types were tested by slide agglutination after transferring to penassay broth. 2 swarms developed from Fla⁻-i have shown i-antigen reaction and 1 swarm developed from Fla⁻-1,2 has shown 1,2-antigen reaction.

These results indicate that Fla⁻₁₁₅₇ revert to Fla⁺ in some frequencies but the frequency of reversion is very low as compared with that of Fla-transduction, and practically it has no influence on the result of Fla⁻-transduction experiment. The results also confirm the Fla⁻-cultures used in the experiment have alternative H-phase ~~specificity~~, although it is not expressed, just same as supposed from preliminary transduction test.

Table 1.

Transductions of Fla and H factors from single phase cultures of Sal. abony (SW803 Fla⁺ b:enx) to Sal. typhimurium (SW1157 Fla⁻ i:1,2).--Fla Fla₁₁₅₇ was used as selective marker.

Phase of donor	Phase of recipient	H-antigen types of Fla-transduction cells							Ratio of linked transduction
		Unlinked type			Linked type			Total	
		i(1,2)	(i)1,2	Total	b(1,2)	(b)1,2	Total		
1. <u>b</u>	1. <u>i</u>	59	1	60	12	0	12	72	0.17
1. <u>b</u>	2. <u>1,2</u>	0	56	56	0	20	20	76	0.26
2. <u>enx</u>	1. <u>i</u>	55	4	59	13	0	13	72	0.18
2. <u>enx</u>	2. <u>1,2</u>	0	67	67	0	16	16	83	0.19
Total		111	128	242	25	36	61	303	0.20

Table 2.

Transductions of Fla and H factors from single phase cultures of SW803 to SW1157 -- summary of I and II.

Phase of donor	Phase of recipient	H-antigen types of Fla-transduction cells						Total	Ratio of linked transduction
		Unlinked type			Linked type				
		i(1,2)	(i)1,2	Total	b(1,2)	(b)1,2	Total		
1. <u>b</u>	1. <u>i</u>	80	1	81	14	0	14	95	0.15
1. <u>b</u>	2. <u>1,2</u>	3	86	89	0	27	27	116	0.23
2. <u>enx</u>	1. <u>i</u>	68	4	72	18	0	18	90	0.20
2. <u>enx</u>	2. <u>1,2</u>	1	90	91	0	20	20	111	0.18
Total		152	181	333	32	47	79	412	0.19

* Test of homogeneity of the frequency of linked transduction of H₁ to Fla₁₁₅₇.

χ^2 (I & II) = 6.74 calculated from the Brandt and Suedecar's formula.

$\mu = 7, 0.3 < P < 0.5$

Numbers of swarms per brush recovered in experiment-II (present experiment).

[illegible]